

Children's Environmental Health



Learning and Behavioral Disorders

5. Lead Screening of Children

About 17 percent of the children living in the United States under the age of 18 have a developmental, learning or behavioral disability.¹ The National Center for Learning Disabilities reports that in 1999, 2.9 million school-aged children in the U.S. were classified as having specific learning disabilities and received some kind of special education support. In Kentucky, more than 75,000 school age children (ages 6 to 21) with learning disabilities were served under the Individuals with Disability Education Act in 1999.²

Learning disabilities, attention deficit/hyperactivity disorder (AD/HD) and emotional and behavioral problems are among childhood disabilities of increasing concern in Kentucky and nationwide. The National Institute of Mental Health estimates that approximately 3 to 5 percent of school-aged children have AD/HD. In most instances, the cause of these and other learning disabilities are unknown. However, research has linked certain environmental toxins to learning and behavioral disorders in children. Extensive laboratory and clinical studies of several compounds toxic to neural development, including lead, mercury, polychlorinated biphenyls (PCBs), alcohol and nicotine, have demonstrated how the developing brain of a child is uniquely vulnerable to environmental agents at levels that have no lasting effects in adults.³

Lead has been identified as causing a range of health effects in children, from behavioral problems and learning disabilities, to seizures and death. There is currently no demonstrated safe concentration of lead in the blood, and adverse health effects can occur at low concentrations (below 10 micrograms per deciliter), according to the U.S. Environmental Protection Agency. Today, elevated blood lead levels are due mostly to ingestion of contaminated dust, paint and soil. Deterioration of lead-based paint can generate contaminated dust and soil, and past emissions of lead in gasoline that subsequently were deposited in the soil also pose risks. Children also may be exposed to lead through drinking water contaminated by residential pipes and fixtures containing lead. Lead exposure to children over the next 10 years is estimated to cost the nation \$22 billion in forgone earnings.⁴

State efforts to identify children at risk from lead poisoning through lead blood testing have been in place in Kentucky since 1992. Local health departments have performed 308,294 blood tests on children for lead between 1992 and 2002. The number of children tested by local health departments for lead has declined significantly, from 42,250 screenings in 1997 to 19,438 screenings in 2002. The Kentucky Department of Health has committed to increasing lead screening rates of children by 20 percent through outreach and education activities in at-risk areas. In Northern Kentucky, members of local churches recently teamed up with the Northern Kentucky Health Department to go door to door in Covington to encourage blood lead testing of children.⁵

State efforts are also underway to develop a Kentucky Blood Lead Surveillance System, performance measures to assess progress and an advisory committee to develop a screening plan based on surveillance data. Until this plan has been implemented, Kentucky will continue to recommend universal blood lead testing of all children at one and two years of age and screening of all children between six months and six years of age based on a verbal lead risk assessment.



Snapshot of Learning Disabilities*

	all disabilities		specific disabilities	
	1990	1999	1990	1999
U.S.	4,361,751	5,683,707	2,144,017	2,871,966
KY	66,376	75,624	23,013	21,111

*Based on students ages 6 through 21 served under the Individuals with Disability Education Act. Source: National Center for Learning Disabilities <http://www.ncl.org/advocacy/pdf/KYData.pdf>

Indicator 5. Lead Screening of Children^{endnote}

